

Work Order ID 85469

85469

Page 1

June-08-12 10:05:05 AM

Item ID: D3065-1

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Step Spacer

Start Date: 08/06/2012 Start Qty: 40.00

40

Cust Item ID:

Required Date: 22/06/2012 Req'd Qty: 40.00

40

Customer:

Reference:

Approvals: Process Plan: ML5

Date: 12/06/08

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3065	Rev B								
100	FLOW WATER JET	0.00							
100									
Waterjet	Memo	0.00							
FLOW CNC Waterjet	1-Cut as per Dwg D3065								
20x .40	Dwg Rev: <u>B</u>								
	Prog Rev: <u>B</u>								
	2-Deburr as required								
110	QC2- Inspect parts off machine FAI/FAIB	0.00							
110									
QC	Memo	0.00							
Quality Control									

1312-6-18

1312-6-18

Work Order ID 85469

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Page 2

Item ID: D3065-1

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Step Spacer

Start Date: 08/06/2012 Start Qty: 40.00

40

Cust Item ID:

Required Date: 22/06/2012 Req'd Qty: 40.00

40

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.00

Quality Control

130

Small Fab

0.00

130

Small Fab

Memo

0.00

Small Fab

Deburr if necessary.

140

NC BRAKE

0.00

140

Brake NC

Memo

0.00

Brake NC

Bend as per Dwg D3065

8/7/12

240

u/AS

P10

39

8/2/12
8/2/12

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA

Date:

QA Closed:

Date:

12/7/18

Work Order: <u>85469</u>				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS Skid-tube <input type="checkbox"/> Crosstube <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Engineering <input type="checkbox"/> Machining <input type="checkbox"/> Small Fab <input checked="" type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Quality <input type="checkbox"/> Thermoforming <input type="checkbox"/> Finishing <input type="checkbox"/> Supplier <input type="checkbox"/> Large Fab <input type="checkbox"/> Composite <input type="checkbox"/> Other <input type="checkbox"/>					
Part No. <u>D3065-1</u>											
NCR No. <u>12-1582</u>											
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data	12/6/19	2/1/19		part moved under forming	85 91 576 27442	Scrap destroy no replace \$5.62	 12/6/19	 12/6/19	 12/6/19		
Equip/Tooling											
Operator											
Material											
Offset/Setup											
Other											
Process											
Supplier											
Training											
Unauthorized											

FAULT CATEGORY				
Landing Gear		Hardware		General
<input type="checkbox"/> Bending Passes Below Min	<input checked="" type="checkbox"/> Breaking	<input type="checkbox"/> Burrs	<input type="checkbox"/> Maintenance	<input checked="" type="checkbox"/> Set-up
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> Missing	<input type="checkbox"/> Contamination	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Supplier
<input type="checkbox"/> Cracks	<input type="checkbox"/> Size/Length	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Off-Set	<input type="checkbox"/> Temperature/Cure
<input type="checkbox"/> Crushed/Crimp at Bending	<input type="checkbox"/> Spinning	<input type="checkbox"/> Documentation/Data	<input type="checkbox"/> Orientation Misread	<input type="checkbox"/> Weld
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Threading	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Calibration	<input type="checkbox"/> Wrong Stock Pulled
<input type="checkbox"/> Other	<input type="checkbox"/> Wrong	<input type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Other
<input type="checkbox"/> Positioned Wrong	Drill Holes	<input type="checkbox"/> Inspection Unqualified	<input type="checkbox"/> Outside Dimensions	
<input type="checkbox"/> Ripples on Inner Bend	<input type="checkbox"/> Misaligned	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Over/Under tolerance	
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Ovalized	<input type="checkbox"/> Jigs/Fixtures/Tooling	<input type="checkbox"/> Part Lost	
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Over/Undersized	<input type="checkbox"/> Kit Incorrect	<input checked="" type="checkbox"/> Part Moved	
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Too Many	<input type="checkbox"/> Kit Missing	<input type="checkbox"/> Raw Material	

85469

Page 3

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 08/06/2012 **Start Qty:** 40.00

40

Cust Item ID:

Required Date: 22/06/2012 **Req'd Qty:** 40.00

40

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150 QC5- Inspect part completeness to step on W/O

0.00

150

OC

Memo

0.00

Quality Control

160 Chemical Conversion Coat per QSI005 4.1

0.00

160

HandFinish

Memo

0.00

Hand Finishing

170 QC7-Inspect Chemical Conversion Coat

0.00

170

QC

Memo

0.00

Quality Control

Work Order ID 85469

85469

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June-08-12 10:05:05 AM

Item ID: D3065-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Step Spacer

Stop *NS2*

Start Date: 08/06/2012 Start Qty: 40.00

40

Cust Item ID:

Required Date: 22/06/2012 Req'd Qty: 40.00

40

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

Identify as per dwg & Stock Location: *GA*

0.00

180

Packaging

Memo

0.00

Packaging

39x

12/07/11

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.00

Quality Control

OK 12/7/12

12074

Picklist Print

June-08-12 10:05:09 AM

Page 1

Work Order ID: 85469

85469

Parent Item: D3065-1

D3065-1

Parent Item Name: Step Spacer

Start Date: 08/06/2012

Required Date: 22/06/2012

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP: C02.11.01Incorporated D3066-1 IPPKJ/RF
IPP: D06.04.25Water jet EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M2024T3S.040		Purchased	No			100	sf	123.1112	0.1238	5.212632	5.5		

M2024T3S 040

2024-T3 .040 sheet

**

1312-6-18

Location

Loc Qty

Loc Code

MAT022

123.1111626

120196

25.85

120605

64.7627416

121197

32.498421

120196

EQ

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Prod. Eng. Coord. <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Supplier <input type="checkbox"/>		Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Other <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Supplier <input type="checkbox"/>																
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Other <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Offset/Setup									
Other									
Process									
Supplier									
Training									
Unauthorized									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending Passes Below Min <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimp at Bending <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Other <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Ripples on Inner Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	Hardware <input type="checkbox"/> Breaking <input type="checkbox"/> Missing <input type="checkbox"/> Size/Length <input type="checkbox"/> Spinning <input type="checkbox"/> Threading <input type="checkbox"/> Wrong Drill Holes <input type="checkbox"/> Misaligned <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Undersized <input type="checkbox"/> Too Many	General <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Documentation/Data <input type="checkbox"/> Finish <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Inspection Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Jigs/Fixtures/Tooling <input type="checkbox"/> Kit Incorrect <input type="checkbox"/> Kit Missing	<input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Off-Set <input type="checkbox"/> Orientation Misread <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Lost <input type="checkbox"/> Part Moved <input type="checkbox"/> Raw Material <input type="checkbox"/> Set-up <input type="checkbox"/> Supplier <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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DART AEROSPACE LTD		Work Order:	85469
Description: Step Spacer		Part Number:	D3065-1
Inspection Dwg: D3065	Rev: B	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.250	+/-0.010	.247	2		V ROL	
2.093	+/-0.010	2.093	2		V	
3.936	+/-0.010	3.933	2		V	
4.186	+/-0.010	4.180	2		V	
0.587	+/-0.010	.585	2		V	
Ø0.128	+0.005/-0.001	.130	2		V	
R0.125	+/-0.010	.125	2		R.G.	
3.465	+/-0.010	3.461	2		V	
Ø1.250	+0.012/-0.001	1.254	2		V	
0.368	+/-0.010	.370	2		V	
0.871 (Pitch)	+/-0.005	-.870	2		V	
0.040	+/-0.010	.040	2		V	

Measured by: <i>RB</i>	Audited by: <i>S</i>	Prototype Approval:
Date: <i>12-6-18</i>	Date: <i>12/6/18</i>	Date:

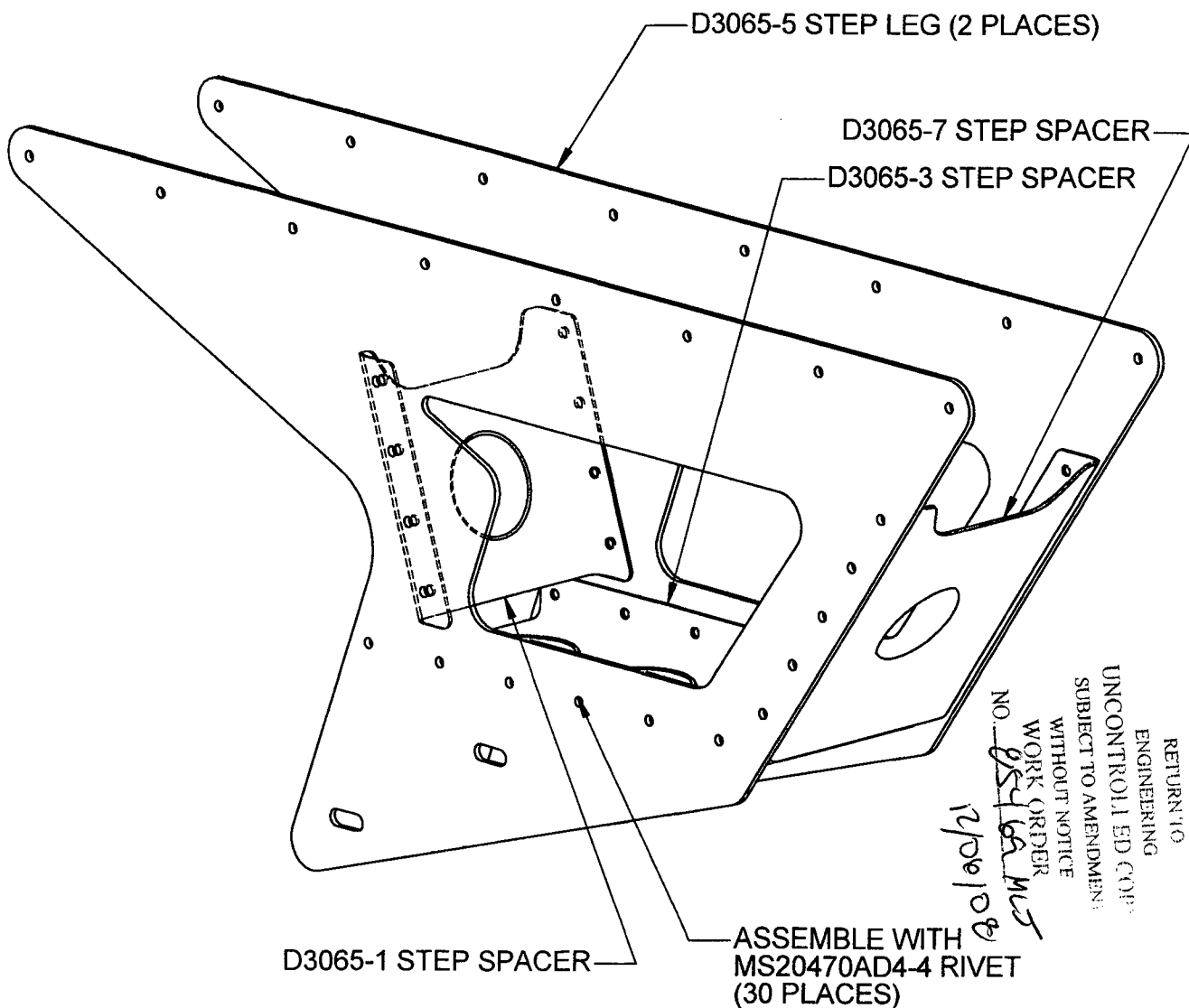
Rev	Date	Change	Revised by	Approved
A	03.09.22	New Issue	KJ/RF	
B	06.06.23	Dwg Rev. changed	KJ/JLM	
C	07.02.07	Dimension 0.040 added	KJ/JLM	<i>[Signature]</i>



DESIGN <i>CP</i>	DRAWN BY <i>CB</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3065	REV. B SHEET 1 OF 5
DATE 06.05.23		TITLE STEP LEG ASSEMBLY	SCALE 1:2
A	02.09.11	NEW ISSUE	
B	06.05.23	ADD 6061-T6 MATERIAL, ADD SLOTS TO D3065-5	

RELEASED

06.06.20 *[Signature]*



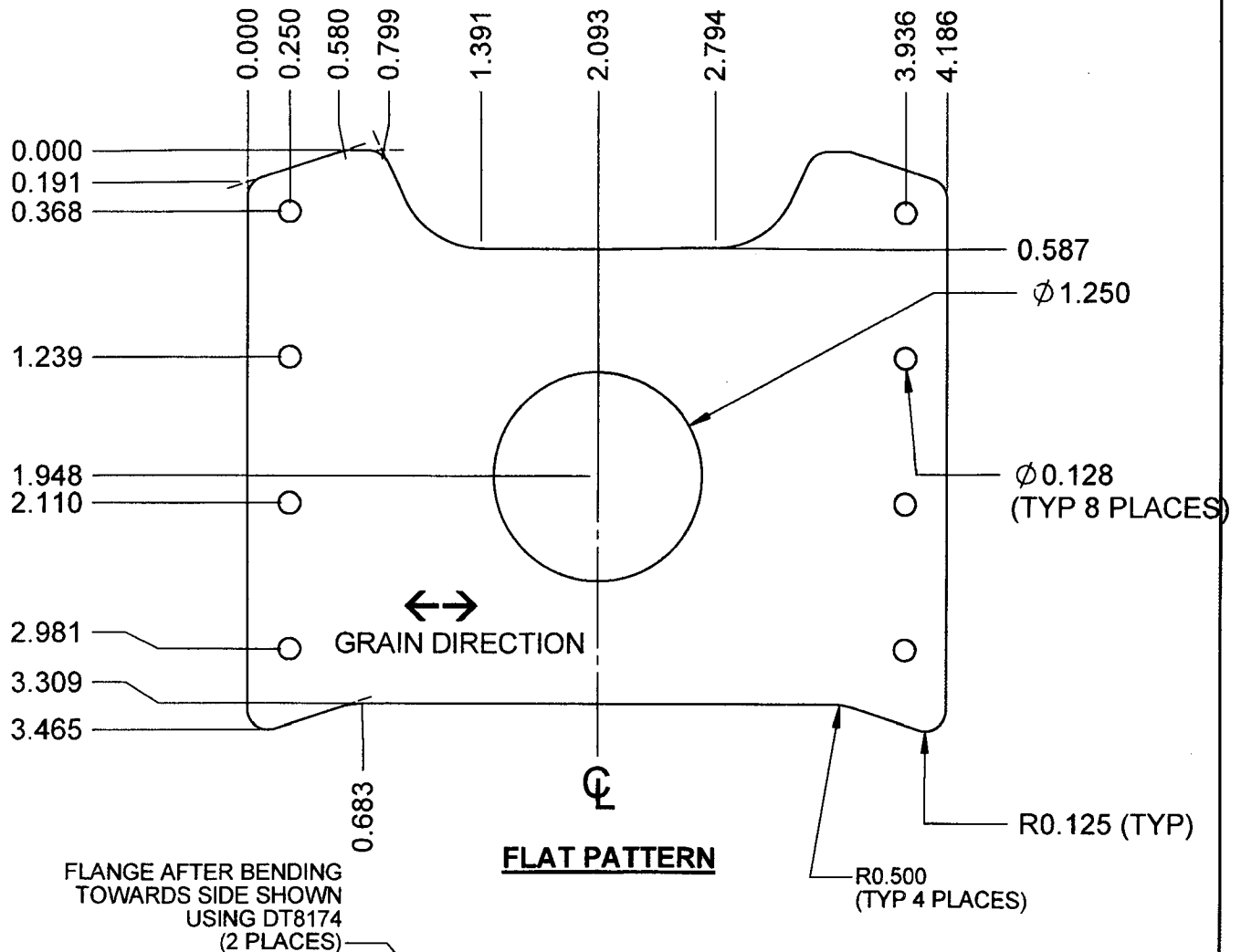
D3065-041 STEP LEG ASSEMBLY

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DART

DESIGN <i>CP</i>	DRAWN BY <i>CB</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3065	REV. B SHEET 2 OF 5
DATE 06.05.23		TITLE STEP LEG ASSEMBLY	SCALE 1:1

**D3065-1 STEP SPACER****BEND DETAIL**

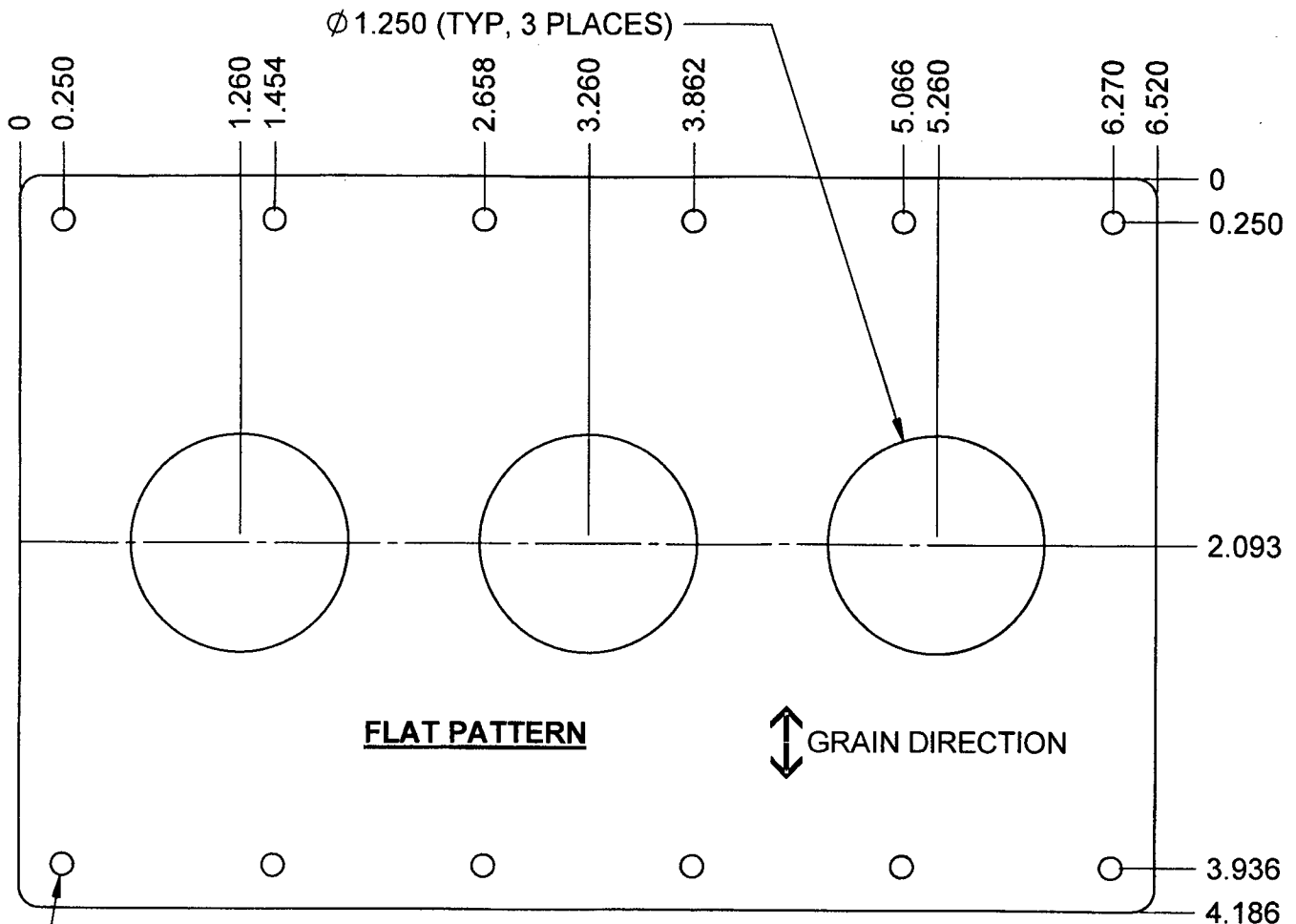
- 1) MATERIAL: 2024-T3 (QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

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CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3065	REV. B SHEET 3 OF 5
DATE 06.05.23	TITLE STEP LEG ASSEMBLY		SCALE 1:1

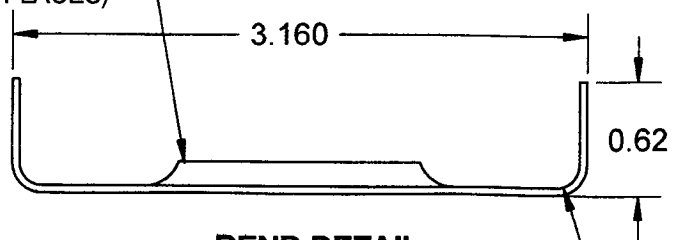


FLANGE AFTER TOWARDS SIDE
SHOWN USING DT8174 (3 PLACES)

Ø 0.129 (TYP, 12 PLACES)

RELEASED

06 06 20 [Signature]



BEND DETAIL

R0.125

06 06 20

D3065-3 STEP SPACER

- 1) MATERIAL: 2024-T3 (QQ-A-250/4)
0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) PART IS SYMMETRIC ABOUT CENTERLINE
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

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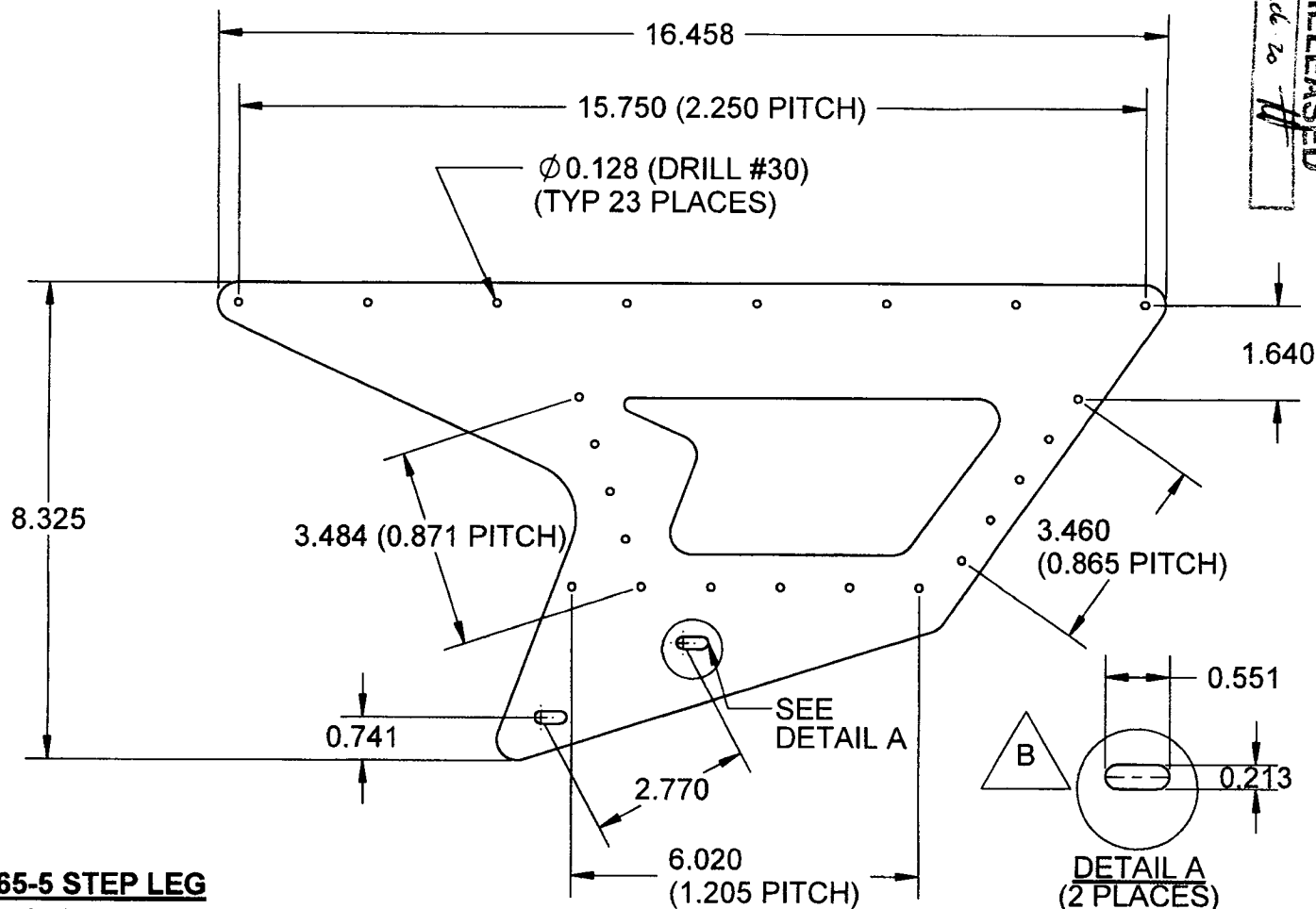
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25409



DESIGN	CP	DRAWN BY	CB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED	PH	APPROVED	PH	DRAWING NO. D3065
DATE	06.05.23	TITLE	STEP LEG ASSEMBLY	REV. B SHEET 4 OF 5
		SCALE	1:3	

RELEASED
06.05.23



D3065-5 STEP LEG

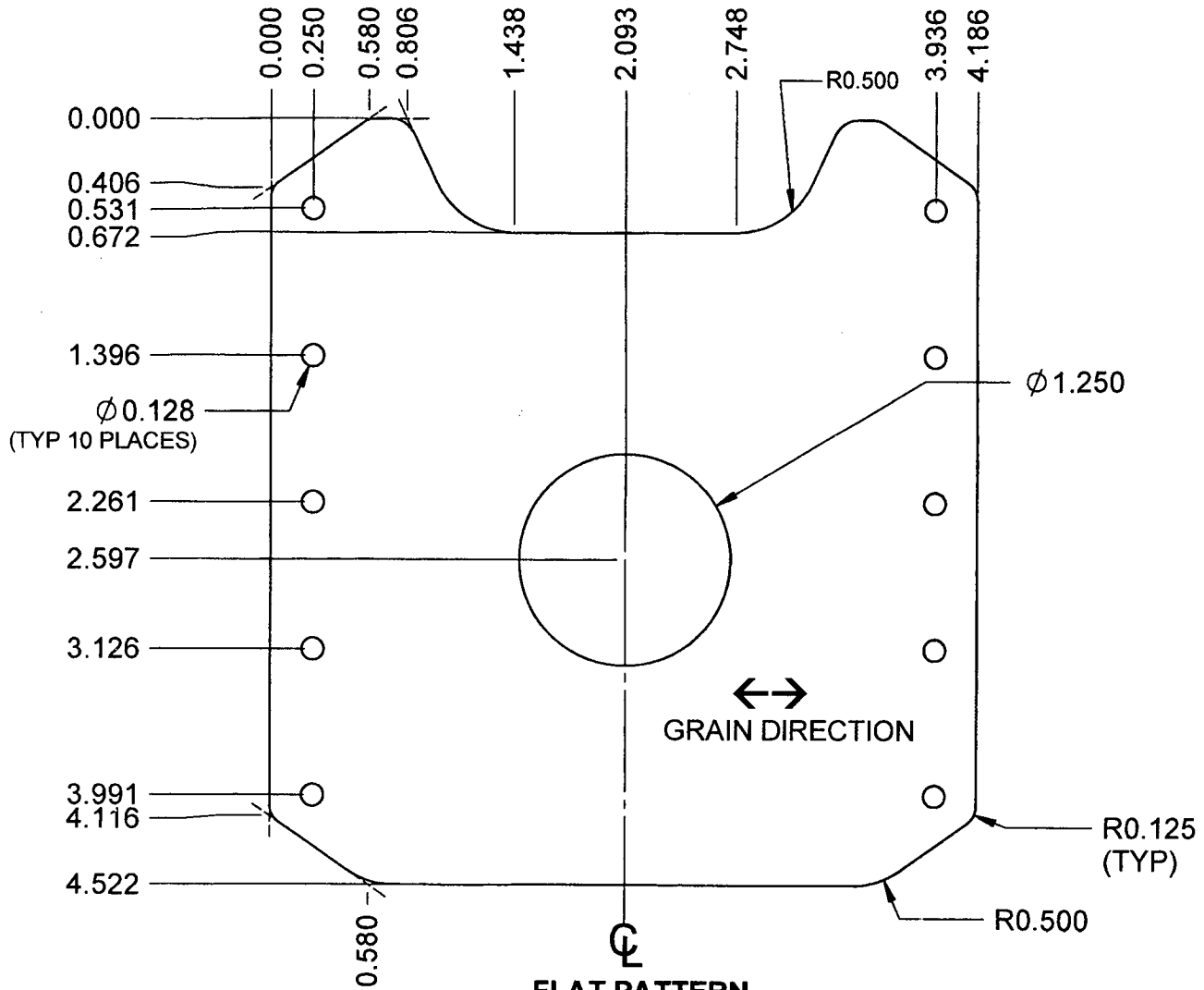
- 1) MACHINE PER DWG FILE "D3065-5.SLDPRT"
- 2) MATERIAL: 6061-T6 (PER QQ-A-250/11 OR AMS 4025 OR AMS 4027) 0.080" THICK (REF DART SPEC M6061T6S.080)
OR
5052-H32 (PER QQ-A-250/8 OR AMS 4016) 0.080 THICK (REF DART SPEC. M5052H32S.080)
- 3) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

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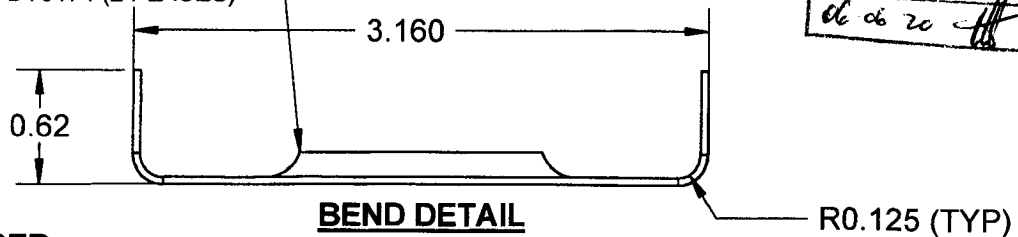
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DART

DESIGN <i>CP</i>	DRAWN BY <i>CB</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3065	REV. B SHEET 5 OF 5
DATE 06.05.23	TITLE STEP LEG ASSEMBLY		SCALE 1:1



FLANGE AFTER BENDING TOWARDS
SIDE SHOWN USING DT8174 (2 PLACES)

**RELEASED***06 06 20***D3065-7 STEP SPACER**

- 1) MATERIAL: 2024-T3 (PER QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) PART IS SYMMETRIC ABOUT CENTERLINE
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

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25/10/23